Otay Lakes Quino Checkerspot Comments

Stuart B. Weiss, Ph.D.
stu@creeksidescience.com

8424 Santa Monica Blvd., Suite A 592
Los Angeles, CA 90069-4267

July 17, 2015

Dan Silver, Executive Director
Endangered Habitats League
8424 Santa Monica Blvd., Suite A 592
Los Angeles, CA 90069-4267

Dear Mr. Silver,

Thank you for the opportunity to review and comment on the DEIR for development in the Otay Lakes area in San Diego County, with a focus on the impacts to Euphydryas editha quino. I have also reviewed comment letters by Longcore, Klein, Osborne, Faulkner, Marshalek, Pratt-Ballmer, and USFWS, as well as relevant portions of the Quino checkerspot Recovery Plan. Many of my comments reinforce points made by these other quino experts.

I have several decades of scientific and conservation experience with the closely related Bay checkerspot butterfly (E. editha bayensis) and many other listed butterflies, as well as with landscape-scale conservation and Habitat Conservation Plans. Since 2008, I have visited numerous quino sites in San Diego and Riverside Counties, including a February 2013 site visit to Otay Lakes and other San Diego County quino sites with USFWS staff. I have the following comments and observations:

1) In the Quino Recovery Plan, the development site is identified as core quino habitat, has been occupied for decades, and is of critical importance to the continued regional persistence of the butterfly.

2) As other commenters have noted, the locations of adult butterflies are often far removed from key breeding areas (patches of hostplants, especially Plantago erecta), and are often clumped. This reflects the far-ranging hilltopping and searching behaviors of adult quino across the landscape, especially when butterfly densities are low and hostplants are patchy. Basing the magnitude of impacts on adult distribution, as was done in the DEIR, is inappropriate.

3) In February 2013, I visited the site with USFWS and other biologists and we detected several quino postdiapause larvae in two of the Plantago patches within the proposed development footprint. The rate of larval observations (1-3 larvae/10 person minutes) indicated that the
patches were occupied at densities of low-hundreds per hectare, based on relationships established with *Plantago* feeding Bay checkerspot larvae.

4) In Figure 2.3-11 in the DEIR, the overlay of the development footprint on the *Plantago erecta* distribution shows that 3 out of 5 of the mapped multi-acre polygons of *Plantago* will be destroyed (including the 2 in which larvae were observed). Numerous mapped point occurrences of *Plantago* are within the footprint as well. *A quantitative analysis of the fraction of Plantago polygon area and fraction of point occurrences in the development footprint is a far more appropriate indicator of impact on this core population than the flawed adult observation analysis.*

5) The remaining two polygons will be directly adjacent to the development and be affected *indirectly* by invasive species, human disturbance, loss of nearby breeding habitat, and other factors, and the prognosis for continued occupancy will decline as indicated by other commenters and by Preston et al. (2012).

6) The impact based on *direct* loss of hostplants appears to be >50% of the breeding habitat, the exact value to be determined by a GIS analysis. Additional *indirect* impacts on the adjacent hostplant patches will raise this figure. This level of impact is incompatible with conservation of the core population, and would contribute to the collapse of the regional metapopulation.

7) Effective mitigation of this level of impact, either onsite or offsite, is doubtful. Trading known core habitat that has been occupied over decades for promises of habitat restoration and management elsewhere is not an effective conservation strategy, especially given the current status of quino populations.

8) For effective *quino* conservation, the only marginally acceptable alternative presented is Alternative G, which largely avoids direct impact on *Plantago* stands except for a few point occurrences.

If there are any questions about these comments, please do not hesitate to contact me. Thank you for your consideration,

Literature cited

Figure 2.3-II
Quino Checkerspot Butterfly Observations and Host Plant Locations
Stuart Bryan Weiss, Ph.D.

Chief Scientist
Creekside Center for Earth Observation, LLC
27 Bishop Lane
Menlo Park, CA 94025
(650) 854-9732
stu "at" creeksidescience.com
www.creeksidescience.com

EDUCATION

Stanford University 1992 - 1996
Ph.D. in Biological Sciences. September 1996
Area of Specialization: Ecology and Conservation Biology
Doctoral Committee: Profs. Paul R. Ehrlich, Peter M. Vitousek, Harold A. Mooney

Stanford University 1978 - 1982
B.S. with Honors Biological Sciences 1984
Area of Specialization: Population Biology and Ecology

Current position: Founder and Chief Scientist, Creekside Center for Earth Observation

Expertise: Conservation biology, landscape ecology, microclimatology, restoration ecology, GIS analysis, statistical analysis and experimental design, nitrogen deposition, policy development.

Creekside Center for Earth Observation, selected projects
• Sep 2006 – present: Science advisor to Bay Area Upland Habitat Goals, Bay Area Open Space Council
• Sep 2006 – present: Restoration of Clarkia franciscana and other rare plants in the San Francisco Presidio, National Park Service and Presidio Trust
• Sep 2007 – present: San Mateo Thomrnmint Restoration, USFWS funded
• Aug 2006 – Mar 2008: Stream temperature characterization of San Francisquito Creek, San Francisquito Watershed Council
• 2004-2006: Habitat assessment of microclimate in Monarch Butterfly Biosphere Reserve, Mexico, funded by World Wildlife Fund, Mexico
• 1999-present: Calpine Metcalf Energy Center Project: N-deposition impact assessment, mitigation planning, and long-term monitoring, negotiations with CEC and USFWS.
• 2001-present: Edgewood Preserve Habitat restoration for Bay checkerspot butterfly: assessed N-deposition and habitat impacts from I-280, planned the restoration of habitat and reintroduction of butterfly in 2007
• Continuing studies of Bay checkerspot butterfly ecology and conservation
• Vineyard microclimate studies with Robert Mondavi Winery, Woodbridge Winery, Etude Winery, Gallo of Sonoma, Opus One, J. Lohr, and other wineries
• Habitat assessment of over-wintering monarch butterflies California
• Regional biodiversity assessments in Oaxaca, Mexico and Podocarpus National Park, Ecuador
• Climate change research and mapping in White Mountains, CA

**Postdoctoral Fellow**, Center for Conservation Biology, Stanford University: 1996-1999
**Staff Biologist**, Center for Conservation Biology, Stanford University: 1984-1992

**SELECTED PUBLICATIONS** (From 29 peer reviewed, full list available on request)


